UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,864	09/22/2006	Jun Maede	KY-5484	4400

7590 05/11/2009

Mattingly Stanger Malur & Brundidge
1800 Diagonal Road
Suite 370
Alexandria, VA 22314

EXAMINER	
LEE, GENE W	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
05/11/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,864	MAEDE ET AL.	
	Examiner	Art Unit	
	Gene W. Lee	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/22/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The term 'clock' is used several times when it appears that an increment of time is being referred to as opposed to a device. The use of the term 'clock' as a noun in reference to time is not typical idiomatic English (though it does appear occasionally via the literary device of metonymy). It is suggested that when referring to an increment of time, that 'clock' be appropriately replaced by 'clock pulse', 'clock cycle', 'clock count', 'clock increment', or the like. Appropriate correction is required.

Claim Objections

2. **Claims 1-13 are objected to** because of the following informalities: The abbreviation 'EL' should be replaced by 'electroluminescent' and/or defined as such. All abbreviations and acronyms should be replaced by full terms and/or defined to be their full terms. Appropriate correction is required.

3. **Claim 1 is objected to** because of the following informalities: The abbreviation 'OEL' should be replaced by 'organic electroluminescent' and/or defined as such. Appropriate correction is required.

4. **Claim 4 is objected to** because of the following informalities: The use of the term 'clocks' as a noun in reference to time (as opposed to a device) is not typical idiomatic English (though it does appear occasionally via the literary device of metonymy). It is suggested that when referring to an increment of time, that 'clocks' be

appropriately replaced by 'clock pulses', 'clock cycles', 'clock counts', 'clock increments', or the like. Also, the limitation 'predetermined delay' is preceded by the article 'the' when it should be preceded by 'a'. Appropriate correction is required.

5. **Claim 7 is objected to** because of the following informalities: The acronym 'MOS' should be replace by 'metal-oxide semiconductor' and/or defined as such. Appropriate correction is required.

6. **Claim 8 is objected to** because of the following informalities: The abbreviations 'R', 'G', and 'B' should be replaced by 'red', 'green', and 'blue' and/or defined as such. 'ROM' should be replaced by 'read-only memory' and/or defined as such. Appropriate correction is required.

7. **Claim 11 is objected to** because of the following informalities: The abbreviation 'D/A' should be replaced by 'digital/analog' and/or defined as such. Appropriate correction is required.

8. **Claim 12 is objected to** because of the following informalities: The limitation "organic EL panel" is preceded by the article 'the' when it should be preceded by 'a'. Appropriate correction is required.

9. **Claim 13 is objected to** because of the following informalities: The acronym 'IC' should be replaced by 'integrated circuit' and/or defined as such. Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. **Claims 1-5, 9-12 are rejected** under 35 U.S.C. 103(a) as being anticipated by U.S. Patent No. 2005/0184933 (Tomohara) in view of U.S. Patent No. 6,317,138 (Yano et al.).

13. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

14. Regarding claim 1, Tomohara teaches an organic EL drive circuit in which drive currents for driving organic EL elements or a current, on which the drive currents are generated, are generated by converting digital display data into analog signal, sending

the drive currents to the organic EL elements through terminal pins of the organic EL elements in a display period according to a first timing control signal for sectioning the display period corresponding to a scan period for one horizontal line from a reset period corresponding to a retrace period of the one horizontal line and resetting the terminal voltages of the OEL elements in the reset period ([135]), comprising switch circuits for connecting the terminal pins to a predetermined potential line according to a reset pulse (Fig. 6 at 520); a correction data generator circuit for generating correction data for correcting a light emitting period of the organic EL element according to display data for gamma correction of luminance of the organic EL element ([233], [238]); and a reset pulse generator circuit for generating the reset pulse having pulse width corresponding to the gamma correction according to the first timing control signal and the correction data ([10], Fig. 8). Note that the drive currents are described according to product-by-process language, meaning they are directed to the product. Tomohara does not explicitly teach a digital to analog conversion circuit. However, this is a basic element of displays (and likely present in the device of Tomohara, just not mentioned) as disclosed by Yano (Fig. 6). Therefore it would have been obvious to combine the teaching of Tomohara with that of Yano to produce the device of claim 1.

15. Regarding claim 2, Tomohara and Yano combined teach the device of claim 1 as explained above. Tomohara further teaches wherein the correction data generator circuit is a data conversion circuit for converting the display data into the correction data ([233], [238]). Therefore it would have been obvious to combine the teaching of Tomohara with that of Yano to produce the device of claim 2.

16. Regarding claim 3, Tomohara further teaches wherein the reset pulse is generated as a signal delayed from a timing reference, which is a leading edge or a trailing edge of the first timing control signal, by a predetermined amount corresponding to the correction data ([240].

17. Regarding claim 4, Tomohara further teaches comprising a counter for counting the number of clocks corresponding to the correction data, wherein the predetermined delay is generated correspondingly to an output of the counter ([11]-[14]).

18. Regarding claim 5, Tomohara further teaches wherein the organic EL panel is of the passive matrix type, the terminal pins are a plurality of column pins and the first timing control signal is a reset control signal ([4]).

19. Regarding claim 9, Tomohara further teaches wherein the first timing control signal sets the display period to the shortest display period with gamma correction or shorter to sections between the display period and the reset period ([11]-[14]).

20. Regarding claim 10, Tomohara further teaches wherein the reset pulse generator circuit includes a delay circuit for generating a plurality of second timing control signals sequentially delayed by predetermined time in response to the first timing control signal and a selection circuit for selecting one of the plurality of the second timing control signals in response to the plurality of the second timing control signals, the first timing control signal and the correction data to generate the reset pulse having a leading edge corresponding to the leading edge of the selected second timing control signal and a trailing edge corresponding to the first timing control signal ([11]-[14]).

21. Regarding claim 11, Tomohara further teaches current sources for generating the drive currents ([135] – current flows therefore there must be a source), while Yano further teaches D/A converter circuits provided correspondingly to the terminal pins, wherein the D/A converter circuit converts the display data into an analog signal correspondingly to a reference current or a current generated on the basis of the reference current and drives the current source according to the analog signal (Fig. 6). As explained above, the teachings of Tomohara and Yano are compatible, therefore it would have been obvious to one of ordinary skill in the art to supplement the teaching of Tomohara with that of Yano to produce the device of claim 11.

22. Regarding claim 12, Tomohara further teaches an organic EL display device comprising an organic EL drive circuit claimed in claim 1 and the organic EL panel (Abstract).

23. **Claim 6 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Tomohara and Yano as applied to claim 5 above, and further in view of official notice. Regarding claim 6, Tomohara further teaches wherein, a plurality of the switch circuits are provided correspondingly to the column pins, one ends of the switch circuits are connected to the column pins and the other ends of the switch circuits are connected to a potential line set to a predetermined constant voltage (Fig. 6 at 520). Tomohara does not teach wherein the switch circuit is constructed with a transistor. However, official notice is taken that transistor are well-known switches. Therefore, it would have been obvious to one of ordinary skill in the art to combine the knowledge of transistors with the teachings of Tomohara as supplemented by Yano, to produce the device of claim 6.

24. **Claim 7 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Tomohara and Yano and official notice as applied to claim 6 above, and further in view of Tomohara, U.S. Patent No. 4,961009 (Baik) and official notice. Tomohara teaches wherein the predetermined potential line is provided as a connection line to a constant voltage circuit (Fig. 6). Tomohara does not teach having current mirror current sources for generating the drive currents correspondingly to the column pins, the transistors are MOS transistors, ones of the sources and drains of the MOS transistors are connected to outputs of the current sources and the others are connected to the constant voltage circuit. However Baik teaches a current mirror source as a constant voltage source (col. 2, lines 45-55). Using current mirrors is a basic circuit design element, and therefore it would have been obvious to one of ordinary skill in the art to use a current mirror as a constant voltage source. Furthermore, official notice is taken that MOS transistors are well-known transistors, and it would be obvious to one of ordinary skill in the art to select a MOS transistor.

25. **Claim 8 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Tomohara and Yano as applied to claim 2 above, and further in view of Tomohara and official notice. Regarding claim 8, Tomohara further teaches wherein the switch circuit, the correction data generator circuit and the reset pulse generator circuit are provided for each of three primary colors R, G and B ([238]). Tomohara does not teach where the data conversion circuit is constructed with a ROM. However, official notice is taken that a ROM is a well-known means of storing data, and it would have been obvious to one of ordinary skill in the art to store data using a ROM. Therefore, it would have been

obvious to one of ordinary skill in the art to modify the teaching of Tomohara and Yano with that of a ROM to produce the device of claim 8.

26. **Claim 13 is rejected** under 35 U.S.C. 103(a) as being unpatentable over Tomohara, Yano, and official notice as applied to claim 12 above, and further in view of official notice. Official notice is taken that integrated circuits are well-known, and it would have been obvious to one of ordinary skill in the art to put a drive circuit on an integrated circuit.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Publication No. 2003/0052904 (Gu) and U.S. Patent Publication No. 2004/0174388 (Sempel et al.) teach gamma correction devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gene W. Lee whose telephone number is 571-270-7148. The examiner can normally be reached on Monday-Friday, 9:30am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GWL/

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629